ABSTRACT OF THE DISCLOSURE

An EUV lithography system is disclosed. The EUV lithography system comprises a mask chamber having one or more vacuum valves for isolating the mask chamber from the rest of the lithography system, a gas supply line adapted to provide an inert gas to the mask chamber to dechuck the reticle, and a vacuum pump adapted to re-evacuate the mask chamber after the reticle has been released. The one or more vacuum valves are closed to isolate the mask chamber from the rest of the EUV lithography system before venting the mask chamber with an inert gas, such as nitrogen, to release the reticle from the chuck. The chuck in the EUV system may further comprise a contact surface for holding a back surface of the reticle to the chuck, and a plurality of openings in the chuck, each opening having a first end and a second end, the first end of each opening being coupled to the gas supply line, and the second end of each opening being coupled to the contact surface of the chuck. The gas supply line provides the inert gas to the contact surface of the chuck and the back surface of the reticle via the plurality of openings in the chuck to release the reticle from the chuck. After the reticle has been released, the mask chamber is re-evacuated again before wafer exposure is started.